



AORTIC LIVE

2017

October 23–24, 2017
Bucerius Law School
Hamburg, Germany

LIVE CASE GUIDE



Newest developments demonstrated by world experts – transmitted in 3D

WELCOME

Dear Colleagues,

During the 4th Aortic Live Symposium 20 live cases are scheduled to be performed and transmitted to the auditorium. The aim of this booklet is to give you an overview about the live case schedule and to provide a practical guide through the procedures.

We hope for your understanding that with respect to the clinical needs of the patients changes of the schedule may occur. Furthermore, the anticipated procedural steps are just an outline of the procedure.

Depending on the discretion of the operator the procedural strategy or the choice of material may vary.

Sincerely yours,



Prof. Tilo Kölbel and Prof. Heinz Jakob

Also on behalf of the co-directors



Monday, October 23, 2017

CASE 01 | VALVE-SPARING ROOT REPAIR WITH GETINGE CARDIOROOT GRAFT IN SLEEVE-TECHNIQUE

Live from Essen | Session 1 | 08:30-13:00

Patient data: Male, 45 years

Operators: A. Gamba, T. Tasca, K. Tsagakis

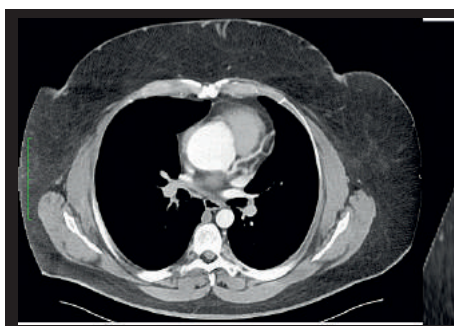
Clinical data: Aortic root aneurysm, mild AV regurgitation

Risk factors: Obesity BMI 54

Procedural

- steps:**
1. Median sternotomy, cardiopulmonary bypass
 2. Demonstration of AV and aortic root
 3. Preparation of Cardioroot-Graft
 4. Sleeve procedure
 5. TEE, result

- Materials:**
1. Geringe Cardioroot-Graft
 2. B.Braun EinsteinVision 3.0



CASE 02 | MINIMALLY INVASIVE AORTIC VALVE REPAIR

Live from Hamburg | Session 1 | 08:30-13:00

Patient data: Male, 57 years, U. I.

Operators: G. El Khoury, E. Girdauskas

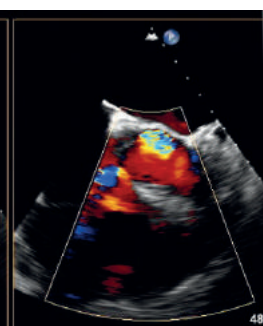
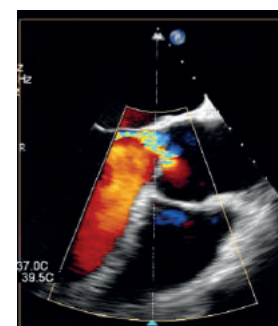
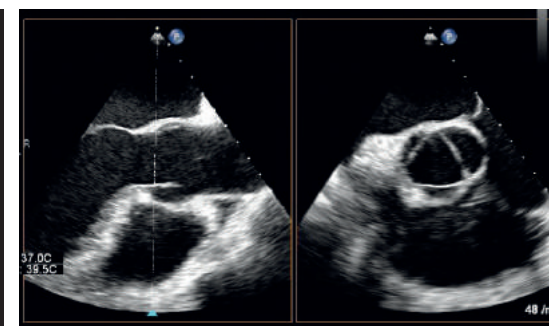
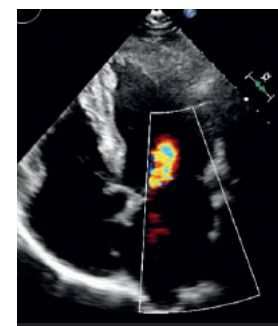
Clinical data: Severe aortic regurgitation (tricuspid aortic valve), marginal aortic root dilatation of 40mm

Risk factors: Hypertension, s/p stroke 2012, slipped disc (lumbar spine)

Procedural

- steps:**
1. Median sternotomy / CPB
 2. Evaluation of aortic valve, identification of the mechanism of regurgitation
 3. Aortic valve repair (correction of RCC prolapse and AV annular stabilization by means of reimplantation technique)
 4. Intraoperative TEE control after AV repair procedure

Material: Vascutek Valsalva graft



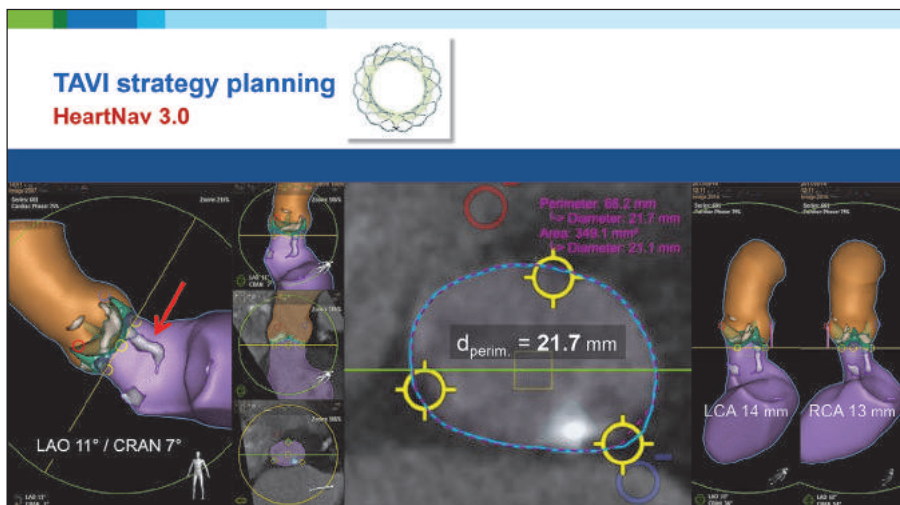
CASE 03 | TRANSFEMORAL TAVI WITH MEDTRONIC EVOLUT PRO

Live from Berlin | Session 1 | 08:30-13:00

Patient data: Female, 82 years**Operators:** A. Unbehaun, C. Klein, A. Meyer**Clinical data:** Aortic stenosis (NYHA II-III, CCS II-III, dizziness, s/p syncope), Moderate mitral regurgitation (annulus calcification), Paroxysmal atrial fibrillation (apixaban), s/p stroke, s/p hip replacement, Lung emphysema**Risk factors:** EuroSCORE-II 4.2%, STS PRoM 3.5%, STS MoM 19.9%, Permanent stroke 4.4%, Σ : Intermediate surgical risk, ACC/STS TAVR In Hospital Mortality Risk 2.0%**Present state:** ACC/STS TAVR risk score 4.5%**Procedural**

- steps:**
1. Conscious sedation, percutaneous femoral access, Medtronic Evolut PRO 26 mm
 2. BAV (TrueFlow balloon without rapid pacing)
 3. Standard TF-TAVI procedure

- Materials:**
1. Abbott Proglide
 2. Bard TrueFlow Balloon 46 mm
 3. Medtronic Evolut PRO



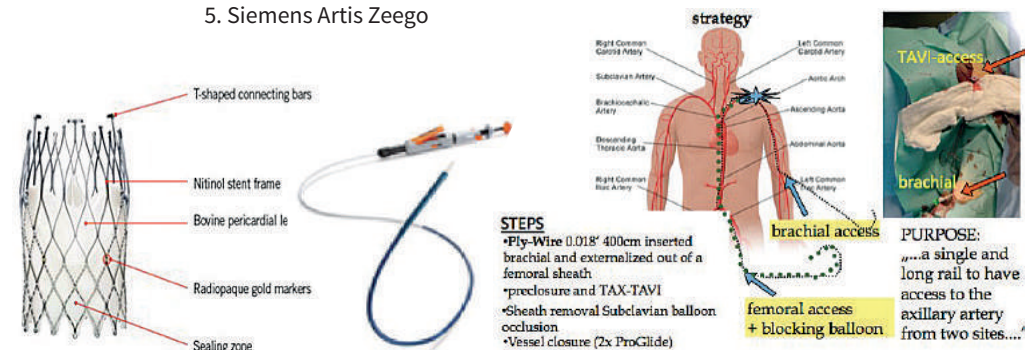
CASE 04 | TRANSAXILLARY TAVI WITH NVT ALLEGRA

Live from Hamburg | Session 1 | 08:30-13:00

Operators: U. Schäfer, D. Wendt, L. Conradi, F. Deuschl**Risk factors:** Elderly patient with severe, symptomatic aortic stenosis, comorbid conditions precluding surgical aortic valve replacement with limited access for TAVI.**Procedural**

- steps:**
1. Establish access via left subclavian artery by a true percutaneous approach. Secure access by a long 0.014" safety-wire introduced via the left brachial artery and externalized via a femoral artery (blocking balloon 8mmx40mm placed in the thoracic aorta). Wire-guided puncture of the axillary artery, preclosure with two Proglides.
 2. Additional puncture of the contralateral femoral artery (6F sheath for placement of aortic root diagnostic pigtail catheter).
 3. Retrograde wire-passage of aortic valve, exchange wire against Safari guidewire, insert the 18Fr introducer sheath with subsequent TAVI from this access site. Perform balloon aortic valvuloplasty (BAV) during rapid ventricular pacing if needed before TAVI. Positioning and stepwise deployment of transcatheter heart valve (THV) according to IFU.
 4. Access site closure under dry conditions using the blocking balloon.

- Materials:**
1. Coronary j-tip wire, Terumo straight wire, Safari guide wire, Ply-Wire, short and long 6F sheaths, 5Fr Amplatz left (AL2) catheter, 18Fr Boston sheath
 2. True Balloon as BAV balloon (if needed)
 3. NVT Allegra Valve with Delivery System
 4. Blocking balloon (any brand)
 5. Siemens Artis Zeego



CASE 05 | TRANSAPICAL TAVI WITH BOSTON SCIENTIFIC ACURATE NEO

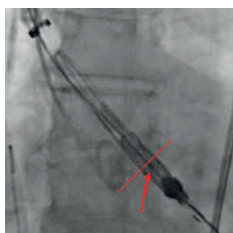
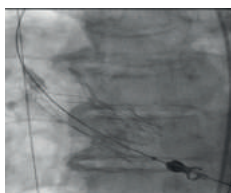
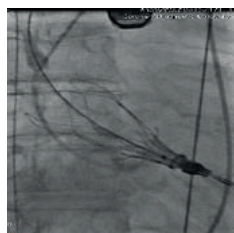
Live from Hamburg | Session 1 | 08:30-13:00

Operators: L. Conradi, U. Schäfer, A. Schäfer**Risk factors:** Elderly patient with severe, symptomatic aortic stenosis, comorbid conditions precluding surgical aortic valve replacement**Procedural steps:**

1. Establish minimally-invasive thoracic access via left-anterior minithoracotomy (5th intercostal space, skin incision approx. 4 cm, soft-tissue retraction), open pericardium, secure left ventricular (LV) access by felt-pledgeted u-stiches, place epicardial pacemaker lead in preparation of rapid ventricular pacing (RVP); simultaneously puncture of femoral vein (6F sheath as safety back-up) and femoral artery (6F sheath for placement of aortic root diagnostic pigtail catheter)
2. Puncture of LV, antegrade wire-passage of aortic valve using j-tip soft coronary wire, long 6F sheath, exchange wire against ST1 extra-stiff guidewire, insert 14F sheath, perform balloon aortic valvuloplasty (BAV) during rapid ventricular pacing
3. Exchange 14F sheath for valve delivery catheter (sheathless), positioning and stepwise deployment of transcatheter heart valve (THV)
4. Optional: postdilate THV depending on residual paravalvular leakage and/or transprosthetic gradient; closure of ventricular and thoracic access

Materials:

1. Coronary j-tip wire, extra-stiff guidewire, short and long 6F sheaths, Judkins-right catheter
2. Cook Check-Flo sheath 14F, Bard TrueDilatation BAV balloon
3. Boston Scientific transapical low-profile delivery catheter
4. Boston Scientific ACURATE neo transcatheter heart valve
5. Siemens Artis Zeego



CASE 07 | FROZEN ELEPHANT TRUNK WITH JOTEC E-VITA OPEN NEO

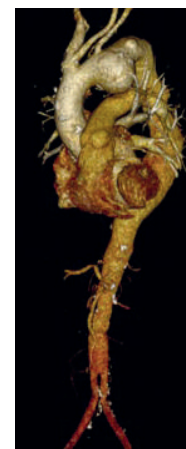
Live from Essen | Session 2 | 14:00-18:30

Patient data: Male, 79 years**Operator:** K. Tsagakis**Clinical data:** Arch aneurysm 55mm**Risk factors:** Aberrant vertebral artery from the arch, St/p Stroke, St/p Carotis TEA left, St.p. Carotis stent right, St/p Y-prosthesis**Procedural steps:**

1. Transfemoral guide wire placement under TEE
2. Right axillary artery cannulation
3. Debranching left axillary and left vertebral artery with 8 mm graft and vein graft, respectively.
4. Bilateral selective cerebral perfusion and hypothermic circulatory arrest distally
5. Evaluation of distal LZ by angioscopy
6. FET in Zone 0, E-vita Open Neo concept
7. Debranching left carotid and innominate artery

Materials:

1. Jotec E-vita Open Neo
2. Jotec E-wire
3. Getinge Hemashield 8mm
3. Möller Medical LiquoGard



CASE 08 | FROZEN ELEPHANT TRUNK
WITH VASCUTEK THORAFLEX HYBRID

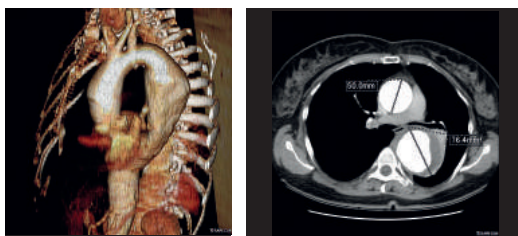
Live from Hamburg | Session 2 | 14:00-18:30

Patient data: Female, 60 years, B. M.**Operators:** C. Detter, J. Brickwedel**Clinical data:** Ascending aortic aneurysm (50mm),
thoracoabdominal aortic aneurysm Type II (76mm)**Risk factors:** Arterial hypertension, nicotine abuse (20 pack years), no relevant CAD**Procedural****steps:**

1. Left supraclavicular incision, arterial cannulation of left subclavian artery via 8mm Vascutek Gelweave prosthesis
2. Median sternotomy, cannulation of the right atrium for venous drainage, ECC, systemic cooling to 24°C–26°C
3. Moderate hypothermic circulatory arrest (HCA), transection of the ascending aorta and the proximal aortic arch, (ante- and) retrograde blood cardioplegia for myocardial protection, selective bilateral antegrade cerebral perfusion (SACP) via two catheters inserted into the innominate and left carotid artery, occlusion of left subclavian artery
4. Total aortic arch replacement in FET technique using the Vascutek Thoraflex 2nd generation
5. Stent deployment and distal anastomosis in zone 2
6. Arterial cannulation of the perfusion side branch for early antegrade lower body perfusion
7. Anastomosis to proximal innominate and left carotid artery using 2nd and 3rd branch
8. Total aortic arch and ascending aortic replacement
9. Anastomosis to distal left subclavian artery using 1st branch during reperfusion and rewarming

Materials:

1. Vascutek Thoraflex 2nd generation
2. Vascutek Gelweave Prosthesis, 8mm



CASE 09 | BRANCHED TEVAR WITH COOK ZENITH BRANCHED GRAFT

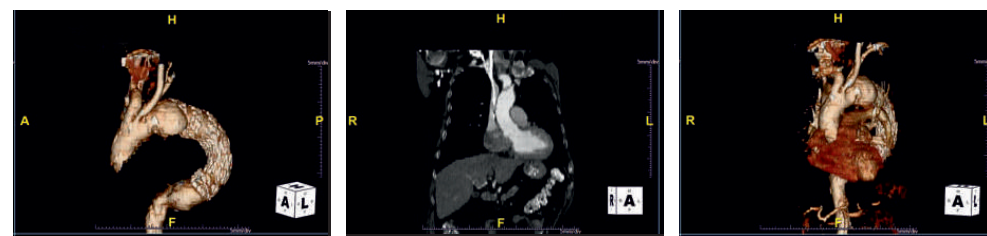
Live from Hamburg | Session 2 | 14:00-18:30

Patient data: Male, 80 years, S. K.**Operators:** S. Haulon, N. Tsilimparis, S. Aleed**Clinical data:** Type Ia Endoleak after TEVAR 2015 for TAAA;
leftside carotid-subclavian bypass 1.9.17**Risk factors:** DM, chronic renal failure with dialysis-dependency, AF (INR 2-3), CAD,
PAD with peripheral bypass (leftside femoropopliteal); no surgical candidate**Procedural****steps:**

1. Cutdown right CFA for main body (24F), 14F right VF for inferior vena cava (IVC) inflow-occlusion, percutaneous access left CFA (5F) for angiography catheter, cutdown RCCA for bridging stent (14F), percutaneous access left brachial artery (8F) for catheterization of LCCA and implantation of bridging stent LCCA and LSA plug
2. Catheterization of aortic valve for Lunderquist wire placement in left ventricle and marking of innominate artery und left subclavian artery by wire
3. Main body deployment under serial angiography and IVC-inflow-occlusion
4. Catheterization of first inner branch via innominate artery, implantation of bridging stent and relining; reconstruction of RCCA to restore perfusion
5. Catheterization of second inner branch via LCCA and implantation of bridging stent, plug LSA

Materials:

1. Cook Coda Balloon 46 mm
2. Cook Zenith branched graft and Cook Thoracic Extension for innominate artery
3. Bard Fluency, Medtronic Everflex
4. Philips Vessel-Navigator



CASE 10 | FENESTRATED TEVAR WITH COOK ZENITH FENESTRATED GRAFT

Live from Hamburg | Session 2 | 14:00-18:30

Patient data: Male, 77 years, F. W.

Operators: N. Tsilimparis, F. Heidemann

Clinical data: TAAA (64mm), penetrating ulcer descending aorta, shaggy aorta

Risk factors: Staged repair:

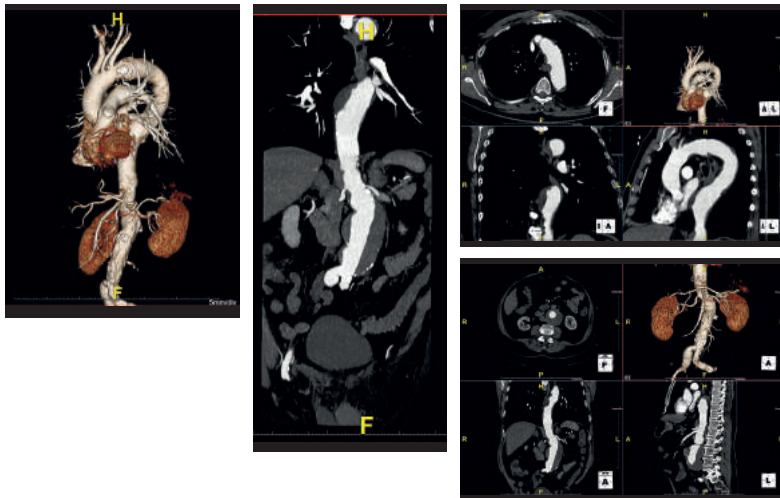
1. fTEVAR (scallop LCCA, fenestration LSA)
2. bTEVAR (4-vessel branched)

Procedural steps:

1. Percutaneous access right CFA (22F) and Proglides, percutaneous access left CFA (5F), percutaneous access left brachial artery (7F)
2. Insertation of fenestrated main body and snaring of the preloaded guidewire for LSA
3. Angiography and development of fenestrated main body
4. Bridging stent LSA

Materials:

1. Abbott Proglide
2. Cook Zenith fenestrated graft
3. Cook Coda Balloon
4. Getinge Advanta, Medtronic Everflex
5. Philips Vessel-Navigator



CASE 11 | TEVAR ZONE 2 WITH JOTEC E-VITA THORACIC

Live from Berlin | Session 2 | 14:00-18:30

Patient data: Male, 76 years, K. D.

Operators: S. Buz, A. Navasardyan

Clinical data: Descending aortic aneurysm, Diameter 70 mm

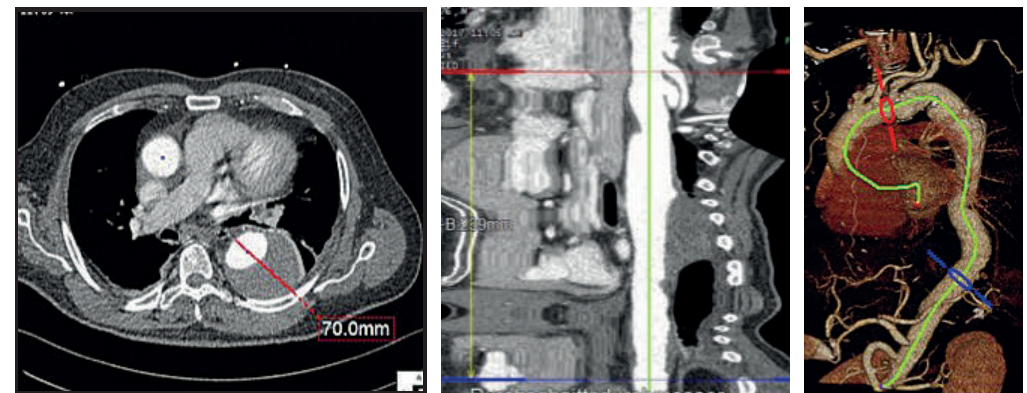
Risk factors: Coronary artery disease, c/o CABG 4 weeks ago, arterial hypertension

Procedural steps:

1. Left carotid subclavian bypass
2. Percutaneous femoral access
3. LAO angulation and angiogram
4. Stentgraftimplantation

Materials:

1. Abbott Proglide
2. Jotec super stiff wire
3. Jotec E-vita Thoracic Stentgraft



CASE 13 | TEVAR IN HOSTILE ARCH WITH GORE CTAG (ACTIVE CONTROL SYSTEM)

Live from Regensburg | Session 2 | 14:00-18:30

Patient data: Female, 80 years, F. M.

Operators: K. Pfister, K. Oikonomou

Clinical data: Sub-acute aortic syndrome with refractory pain and IMH with prominent ulcer like projection

Risk factors: CAD, Hypertension, Diabetes, Adiposity
Acute onset 06.10.2017 with chest and interscapular pain

Procedural steps:

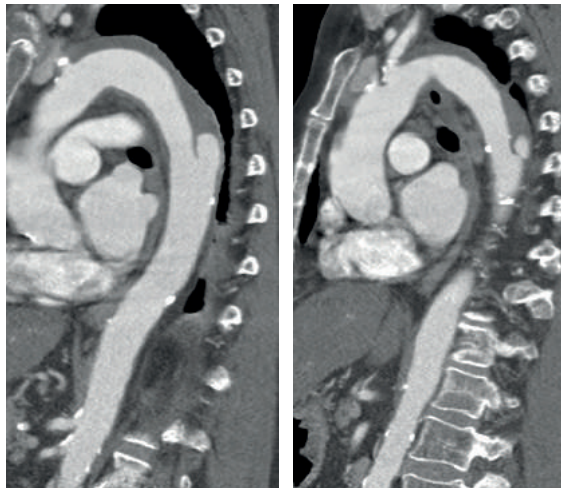
1. Unilateral femoral cut down, percutaneous contralateral access
2. Angiogram and introduction of the proximal stent-graft with overstenting of the left subclavian artery
3. Deployment of the distal stent-graft

Materials:

1. Conformable Gore TAG Thoracic with Active Control System (proximal stent-graft)
2. Conformable Gore TAG Thoracic (distal stent-graft)



Tuesday, October 24, 2017



CASE 14 | CERVICAL DEBRANCHING WITH VASCUTEK GELSOFT

Live from Hamburg | Session 3 | 08:30-13:00

Patient data: Female, 77 years, A. E.

Operator: A. Larena-Avellaneda, M. Scheerbaum

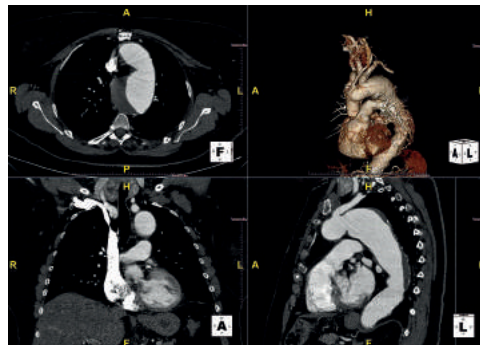
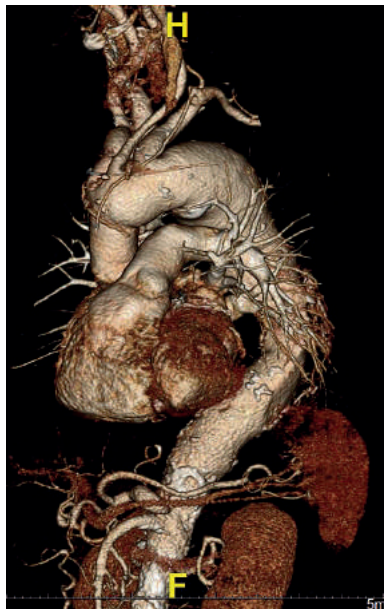
Clinical data: Aortic Arch Aneurysm (67mm), TAAA

Risk factors: Left carotid-subclavian bypass as staged procedure before branched arch repair
Supracoronary ascending aortic replacement 1/16 for aneurysm, HTA, I° atrioventricular block

Procedural

- steps:**
1. Supraclavicular incision, preparation of LSA and LCCA
 2. Heparinisation and clamping of the LSA, end-to-side anastomosis of bypass to LSA, declamping, flushing, heparin and clamping of the bypass
 3. Clamping of the LCCA, end-to-side anastomosis of bypass to LCCA, declamping, flushing heparin, completion of the anastomosis

Material: Vascutek 8 mm Gelsoft prosthesis



CASE 15 | TAAA OPEN REPAIR WITH GETINGE HEMASHIELD

Live from Berlin | Session 3 | 08:30-13:00

Patient data: Female, 76 years, B. U.

Operators: R. Hammerschmidt, C. Knosalla, A. Meyer

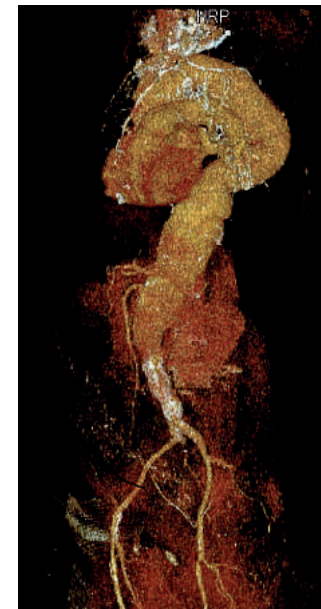
Clinical data: Thoraco-abdominal aneurysm extent I

Risk factors: Hypertension
Nicotine abuse
Ascending replacement 2010

Procedural

- steps:**
1. Normothermic perfusion femoro – femoral
Selective organ perfusion
 2. Thoraco-abdominal incision, retroperitoneal approach
 3. Replacement from left subclavian artery to infrarenal aorta

Material: Getinge Hemashield prosthesis 28 mm

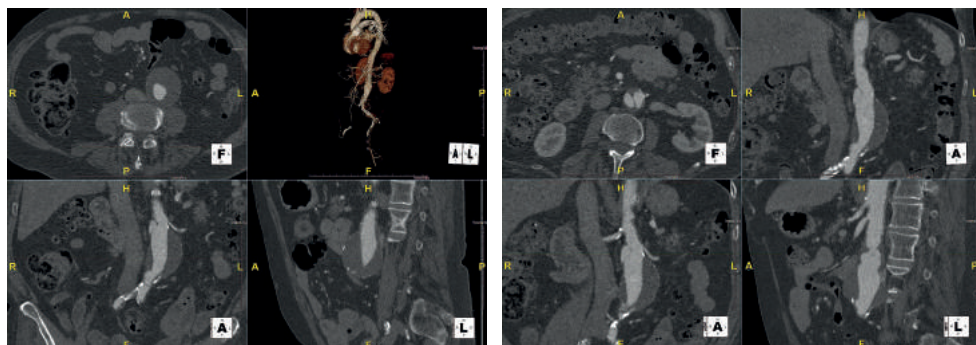


CASE 16 | PARARENAL ANEURYSM OPEN REPAIR
WITH VASCUTEK GELSOFT

Live from Hamburg | Session 3 | 08:30-13:00

Patient data: Male, 70 years, B. G.**Operators:** M. Jacobs, S. Wipper**Clinical data:** Juxtarenal local aortic dissection and infrarenal aortic aneurysm (52mm), PAD with leftside occlusion of CFA, SFA and PFA as well as rightside CIA stenosis**Risk factors:** Occlusion of left internal carotis artery, stenting of right internal carotid artery 2014, CAD with coronary bypass surgery 11/16**Procedural**

- steps:**
1. Bilateral preparation of CFA, SFA, PFA and median laparotomy
 2. Bilateral endarterectomy femoral artery
 3. Proximal: Infrarenal anastomosis, distal: bifemoral anastomosis
 4. Reimplantation of lower left renal artery

Material: Vascutek Gelsoft Prosthesis

CASE 17 | BRANCHED EVAR WITH COOK ZENITH T-BRANCH

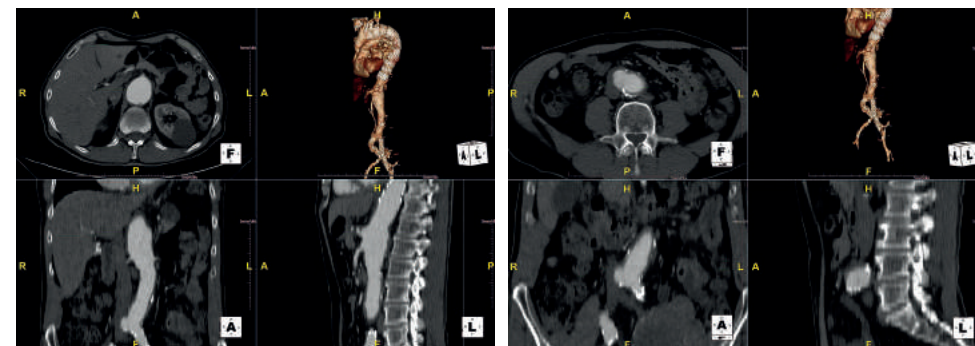
Live from Hamburg | Session 3 | 08:30-13:00

Patient data: Male, 70 years, K. D.**Operators:** N. Tsilimparis, F. Heidemann, S. Aleed**Clinical data:** Aneurysm of visceral aorta (55mm) and postsurgical anastomotic aneurysm after open infrarenal tube graft repair**Risk factors:** Leftside carotid-subclavian bypass 18.4.17 and TEVAR with chimney for LCCA and LSA Plug 21.4.17 for symptomatic Type B dissection, iliac stentgraft for leftside CIA aneurysm 2/17, open infrarenal tube graft repair 2001, PAD, COPD**Procedural**

- steps:**
1. Cutdown right CFA (22F), cutdown left CFA (16F), cutdown right brachial artery (12F)
 2. Deployment of t-Branch, bifurcated graft and right iliac stentgraft, suture of CFA to restore leg perfusion
 3. Establishment of through-and-through wire from right brachial artery to left CFA
 4. Catheterization and bridging stent grafts for all four visceral vessel
 5. Deployment of left iliac stentgraft for CI

Materials:

1. Cook Zenith T-Branch
2. Gore Viabahn
3. Bard Fluency
4. LiquoGard (Möller Medical), Philips Vessel-Navigator
5. Getinge Advanta
6. Medtronic Everflex Stent



CASE 18 | BRANCHED EVAR FOR POST DISSECTION TAAA

Live from Regensburg | Session 3 | 08:30-13:00

Patient data: Male, 55 years, T. I.**Operators:** K. Oikonomou, K. Pfister, M. Janotta**Clinical data:** Progressive 60 mm TAAA following Type B Dissection 2014

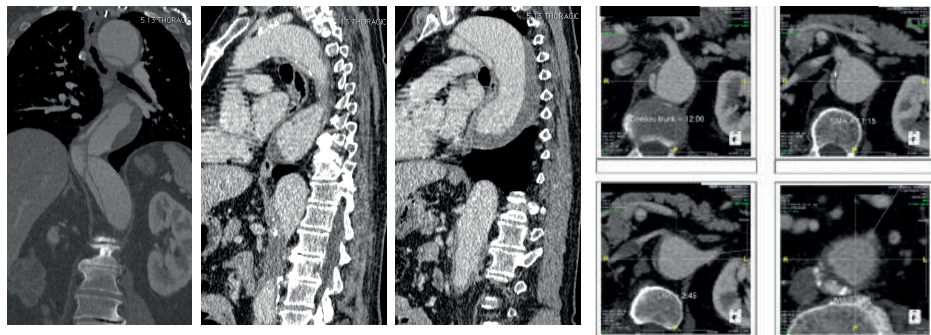
Risk factors: Hypertension, atrophic right kidney, st.p. fem-fem Bypass left
 → right 2014, st.p. right hemicolectomy 2014, paresis of the right lower extremity,
 1st Procedure: Car-Car-Subcl Bypass and thoracoabdominal stentgrafts (4x) 02.10.2017
 2nd Procedure: Deployment of bridging stentgrafts into LRA, SMA and IMA

Procedural steps:

1. Cut down of right axillary artery, puncture of the right SFA (through-and-through wire)
2. Introduction of coaxial 12F and 8F sheaths over the right axillary artery
3. Occlusion test of the CA under MEPs and intrasaccular blood pressure measurement
4. Deployment of the bridging stent into the CA

Materials:

1. Gore 12F DrySeal Flex Sheath, Cook 8F Raabe Sheath, Cook Zenith Thoracic end-graft (ZTEG ProForm and ZDEG ProForm)
2. Cordis 10x80 mm Powerflex Balloon, Cook Zenith custom-made branched endo-graft
3. Volcano intravascular imaging and pressure system
4. Bentley 9x57 and 10x37 BeGraft Plus



CASE 19 | ILIAC SIDEBRANCH EVAR WITH ENDOVASCULAR REPAIR WITH COOK ALPHA ABDOMINAL AND ZBIS

Live from Hamburg | Session 4 | 14:00-16:30

Patient data: Male, 65 years, K. H.**Operators:** B. Modarai, N. Tsilimparis

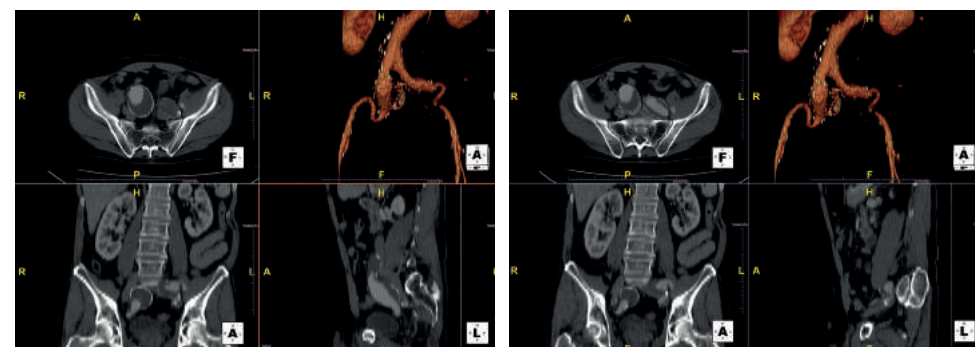
Clinical data: Aneurysm of right CIA (52mm), Aneurysm of left CIA (33mm),
 Infrarenal AAA (43mm)

Risk factors: Bilateral ectasia of popliteal artery, Xarelto for DVT**Procedural steps:**

1. Percutaneous/cutdown both CFA (20F)
2. Insertion of ZBIS device for right CIA, 12F sheath from left CFA for establishment of a femorofemoral through-and-through wire with a preloaded wire in ZBIS device, partial deployment of ZBIS, catheterization of IIA, bridging stent graft for IIA and complete deployment of ZBIS
3. ZBIS for left CIA
4. Bifurcated graft for infrarenal aorta and bridging stents to ZBIS on both sides, stent relining for both CIA

Materials:

1. Cook EVAR and ZBIS devices
2. Getinge Advanta
3. Boston Scientific Wallstent
4. Cook Coda Balloon
5. Philips Vessel-Navigator



CASE 20 | ILIAC SIDE BRANCH AND INFRARENAL EVAR WITH JOTEC E-LIAC AND E-TEGRA

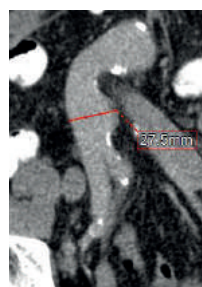
Live from Berlin | Session 4 | 14:00-16:30

Patient data: Male, 72 years**Operators:** S. Buz, A. Navasardyan, T. Nazari-Shafti**Clinical data:** Aortic abdominal aneurysm (max. diameter of 64 mm), dilatation of the right iliac artery (27 mm)**Medical history:** None**Previous interventions :** 2000 fundoplication for hiatal hernia, 2017 incisional hernia repair**Procedural steps:**

1. Percutaneous bilateral access to the common femoral artery (preclose technique)
2. Implantation of side branch stentgraft in the common iliac artery right, partial deployment. cross-over maneuver and insertion of 8fr sheath from left to right side. catheterisation and stenting of internal iliac artery. complete deployment of side branch graft.
3. Bifurcated stentgraft for infrarenal aorta
4. bridging stents to side branch stentgraft and to left common iliac artery
5. Balloon dilatation of proximal infrarenal attachment site, all graft overlap site and distal iliac attachment site

Materials:

1. Abbott proglide
2. Jotec e-liac stentgraft
3. Jotec e-tegra stentgraft
4. Jotec Eventus stentgraft
5. Jotec Expand Balloon



CASE 21 | INFRARENAL EVAR WITH MEDTRONIC TUBE GRAFTS AND APTUS HELI-FX

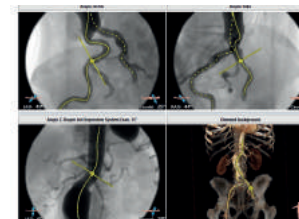
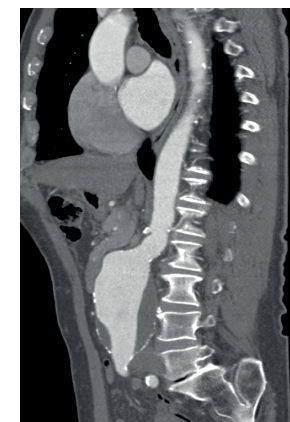
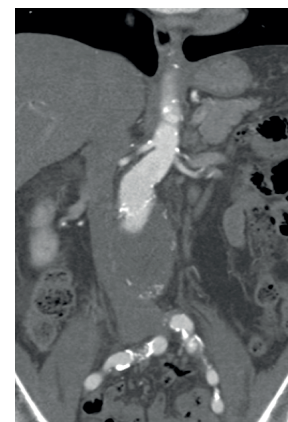
Live from Regensburg | Session 4 | 14:00-16:30

Patient data: Male, 80 years, F. J.**Operators:** K. Pfister, K. Oikonomou, M. Janotta**Clinical data:** 67 mm infrarenal Aneurysm with angulated and slightly bell shaped proximal neck**Risk factors:** Hypertension, GAD**Procedural steps:**

1. Cut down left CFA, percutaneous access right CFA
2. Main body over the left groin
3. Introduction of the right iliac limb and left iliac extension
4. Proximal endoanchors at 45° LAO (2x) and 45° RAO (2x)

Materials:

1. Medtronic Endurant II main body 25 14 103
2. Medtronic Endurant iliac limbs 16 16 156 right / 16 16 124 left
3. Medtronic Reliant Balloon
4. Medtronic Aptus HeliFx Endoanchors

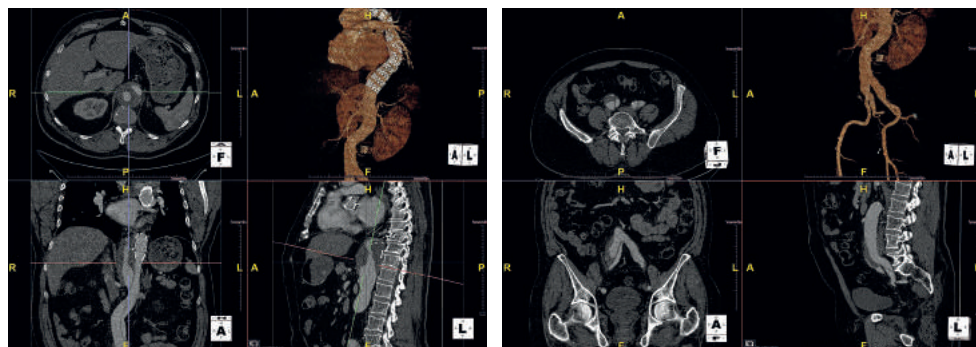


CASE 22 | AORTOILIAC REPAIR WITH GETINGE SYNERGY

Live from Hamburg | Session 4 | 14:00-16:30

Patient data: Male, 45 years, M. C.**Operators:** J. Schmidli, S. Wipper**Clinical data:** Aortoiliac false lumen aneurysm, right CIA 40mm**Risk factors:** Ehlers-Danlos syndrome, Type A dissection, bio-prosthetic aortic valve + ascending aortic replacement 02/2015, CAD with coronary bypass 02/2015, TEVAR and Candyplug 03/2016**Procedural****steps:**

1. Median laparotomy
2. Infraarenal clamping and proximal anastomosis
(if necessary supra-/intraarenal clamping)
3. Distal clamping and biliacal anastomosis
(if necessary transposition of right internal iliac artery to prosthesis)

Material: Getinge Synergy

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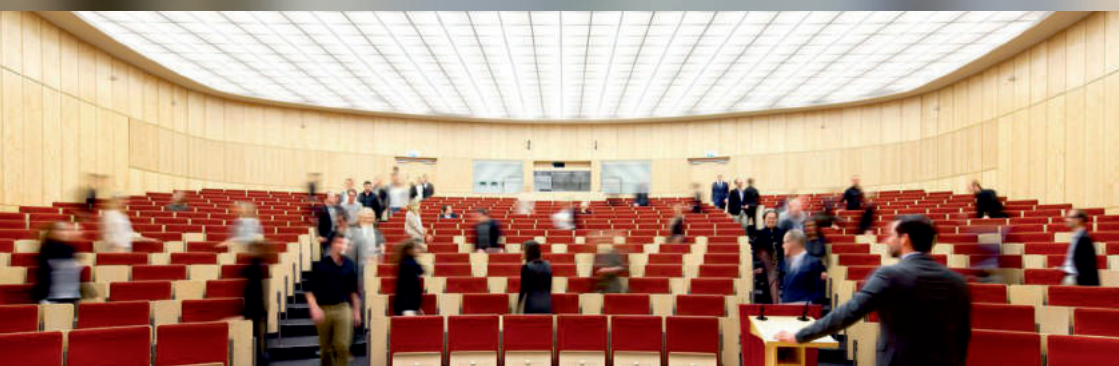
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AORTIC LIVE

2017

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Bucerius Law School
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